

V. REMARKS

Entry of the Amendment is proper under 37 C.F.R. §1.116 because the Amendment: a) places the application in condition for allowance for the reasons discussed herein; b) does not raise any new issue requiring further search and/or consideration because the Amendment amplifies issues previously discussed throughout prosecution; c) does not present any additional claims without canceling a corresponding number of finally rejected claims; and d) places the application in better form for appeal, should an Appeal be necessary. The Amendment is necessary and was not earlier presented because it is made in response to arguments raised in the final rejection. The amendments to the subject claims do not incorporate any new subject matter into the claims. Thus, entry of the Amendment is respectfully requested.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as unpatentable over the Admitted Prior Art (APA) in view of Yamaoka (U.S. Patent No: 4,850,577). The rejection is respectfully traversed.

First, Applicant would like to point out to the Examiner that claim 1, as amended, is now identical to claim 7 that was previously presented as a new claim. The presentation of claim 1, as amended, and claim 7 is for the ease and convenience of the Examiner to determine that the features now included in amended claim 1 are, in fact, identical to claim 7. As a result, no new features have been introduced in amended claim 1 that have not already been examined by the Examiner. Thus, upon allowance on the application, the Examiner is authorized to cancel claim 7.

The APA discloses a metal melting furnace including a metal melting furnace having a preheating flue provided on its upper end with a material inlet opening through which a meltable material is introduced in the preheating flue and, on its lower end, with an inclined hearth. The meltable material such as metal is introduced in the preheating flue and is heated and molten by a melting burner which is oriented toward the lower end of the preheating flue. The molten metal is introduced in a molten metal reservoir through the inclined hearth. The

temperature of the molten metal in the reservoir is maintained at a predetermined value by a temperature maintaining burner. A meltable material holder having an open lower end is provided in the preheating flue so that there is a gap between the meltable material holder and an inner furnace wall of the preheating flue that is located on the side opposite to the melting burner.

Yamaoka teaches a melting and holding furnace that includes a melting chamber in which material is melted, a well, a holding chamber disposed between the melting chamber and the well in which a molten material is maintained at a selected temperature. A partition wall is disposed between the melting chamber and the holding chamber. A plurality of submerged banks project from a bottom of the holding chamber and extend transversely of a line linking the melting chamber and the well. The partition wall defines a communicating bore below a melt surface for allowing molten material to flow from the melting chamber to the holding chamber. A hot blast opening above the melt surface allows hot blast exhaust gases to flow from the holding chamber to the melting chamber, thereby defining a portion between the hot blast opening and the communicating bore which functions as a slag barrier.

Claim 1, as amended, is directed to a metal melting furnace including a preheating flue which is provided on its upper portion with a meltable material inlet opening and on its lower portion with an inclined hearth and a material melting burner which is oriented toward the lower portion of the preheating flue, a molten metal reservoir and a temperature maintaining burner which provided in the molten metal reservoir so that a meltable material which is introduced in the preheating flue is heated and melted by the material melting burner and is moved along and on the inclined hearth into the molten metal reservoir in which the temperature of the molten metal is maintained by the temperature maintaining burner. Claim 1 recites that a separation wall is provided between the inclined hearth and the molten metal reservoir to define a molten metal processing portion in a form of a chamber disposed between the separation wall and the inclined hearth. Claim 1 further recites that the separation wall is provided with a connecting passage for the molten metal between the molten metal reservoir and

the molten metal processing portion at a height level higher than a bottom surface of the molten metal processing portion with the separation wall being provided on its upper portion with an exhaust gas passage which permits exhaust gas discharged from the molten metal reservoir to pass therethrough.

It is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests the features of claim as amended. Specifically, it is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests a separation wall provided between an inclined hearth and a molten metal reservoir to define a molten metal processing portion in a form of a chamber disposed between the separation wall and the inclined hearth.

Furthermore, it is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests that the separation wall is provided with a connecting passage for the molten metal between the molten metal reservoir and the molten metal processing portion at a height level higher than a bottom surface of the molten metal processing portion. Thus, it is respectfully submitted that one of ordinary skill in the art would not be motivated to combine the features of the applied art because such combination would not result in the claimed invention. As a result, it is respectfully submitted that claim 1 is allowable over the applied art.

In summary, Applicant would like to point out the following characteristics of the claimed invention that distinguishes it from the applied art:

(1)

As the separation wall is provided between the inclined hearth and the molten metal holder to define the molten metal processing portion, no impurity can directly enter the molten metal reservoir, so that only the clean molten metal can be introduced into the molten metal reservoir through the connecting passage at the lower end of the separation wall. Consequently, the purity of the molten metal in the molten metal reservoir can be remarkably increased and maintained for long time. Furthermore, if the impurities are stuck to the bottom surface of the molten metal reservoir or to the lower side of the connecting

passage for the molten metal, the impurities can be easily removed and discharged upon cleaning of the furnace.

(2)

(A) A separation wall is provided between the inclined hearth and the molten metal reservoir to define a molten metal processing portion.

(B) The separation wall is provided with a connecting passage for the molten metal, between the molten metal reservoir and the molten metal processing portion, at a height level higher than a bottom surface of the molten metal processing portion.

(C) The separation wall is provided on its upper portion with an exhaust gas passage which permits exhaust gas discharged from the molten metal reservoir to pass therethrough.

(D) An inspection opening with a door is provided in a furnace wall surface to open into the molten metal processing portion.

As mentioned above, claim 7 as previously presented is identical to claim 1, as now amended, and the Examiner is authorized to cancel claim 7. All of the features underlined above (appeared in claim 7) have been examined in the Amendment that was filed on June 23, 2005. As a result, no new features have been added by virtue of the amendments to claim 1.

Claims 2-6 depend from claim 1 and include all of the features of claim 1. Thus, it is respectfully submitted that the dependent claims are allowable at least for the reason claim 1 is allowable as well as for the features they recite.

Withdrawal of the rejection is respectfully requested.

In view of the foregoing, reconsideration of the application and allowance of the pending claims are respectfully requested. Should the Examiner believe anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

Should additional fees be necessary in connection with the filing of this paper or if a Petition for Extension of Time is required for timely acceptance of the same, the Commissioner is hereby authorized to charge Deposit Account No. 18-0013 for any such fees and Applicant(s) hereby petition for such extension of time.

Respectfully submitted,

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Enclosure(s): Amendment Transmittal

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